

(FILE 'HOME' ENTERED AT 15:42:23 ON 12 APR 2004)

FILE 'MEDLINE, CAPLUS, BIOSIS, AGRICOLA' ENTERED AT 15:42:27 ON 12 APR 2004

L1 9671 S BACILLUS (2N) MEGATERIUM
L2 365 S L1 AND P450
L3 102 S L1 (10N) P450
L4 0 S L3 AND (SESQUITERPENE OR TERPENE OR FARNESOL)
L5 29 S L3 AND (OXID?)
L6 19 DUP REM L5 (10 DUPLICATES REMOVED)
L7 0 S L6 AND TERPENE
L8 0 S L3 AND TERPENOID
L9 0 S P450 NEAR5 MONOOXYGENASE
L10 3356 S P450 (5N) MONOOXYGENASE
L11 7 S L10 AND TERPENOID
L12 5 DUP REM L11 (2 DUPLICATES REMOVED)
L13 24 S L10 AND TERPE?
L14 19 DUP REM L13 (5 DUPLICATES REMOVED)

FILE 'STNGUIDE' ENTERED AT 15:48:31 ON 12 APR 2004

=> d his

(FILE 'HOME' ENTERED AT 15:42:23 ON 12 APR 2004)

FILE 'MEDLINE, CAPLUS, BIOSIS, AGRICOLA' ENTERED AT 15:42:27 ON 12 APR 2004

L1 9671 S BACILLUS (2N) MEGATERIUM
L2 365 S L1 AND P450
L3 102 S L1 (10N) P450
L4 0 S L3 AND (SESQUITERPENE OR TERPENE OR FARNESOL)
L5 29 S L3 AND (OXID?)
L6 19 DUP REM L5 (10 DUPLICATES REMOVED)
L7 0 S L6 AND TERPENE
L8 0 S L3 AND TERPENOID
L9 0 S P450 NEAR5 MONOOXYGENASE
L10 3356 S P450 (5N) MONOOXYGENASE
L11 7 S L10 AND TERPENOID
L12 5 DUP REM L11 (2 DUPLICATES REMOVED)
L13 24 S L10 AND TERPE?
L14 19 DUP REM L13 (5 DUPLICATES REMOVED)

FILE 'STNGUIDE' ENTERED AT 15:48:31 ON 12 APR 2004

	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments
1	BRS	L1	0	sesquiterpene near10 monooxygenase	USPAT; US-P GPUB ; EPO; JPO; DER WENT; IBM_T DB	2004/04/12 15:11	
2	BRS	L2	9	sesquiterpene near10 oxidation	USPAT; US-P GPUB ; EPO; JPO; DER WENT; IBM_T DB	2004/04/12 15:11	
3	BRS	L3	24	camphor and monooxygenase and cytochrome and p450	USPAT; US-P GPUB ; EPO; JPO; DER WENT; IBM_T DB	2004/04/12 15:14	
4	BRS	L4	658	monooxygenase and cytochrome and p450	USPAT; US-P GPUB ; EPO; JPO; DER WENT; IBM_T DB	2004/04/12 15:14	

	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments
5	BRS	L5	15	l4 and sesquiterpene	USPAT; US-P GPUB ; EPO; JPO; DER WENT; IBM_T DB	2004/04/12 15:21	
6	BRS	L6	5	p450 near10 sesquiterpene	USPAT; US-P GPUB ; EPO; JPO; DER WENT; IBM_T DB	2004/04/12 15:21	
7	BRS	L7	2646	(p450 and (mutation))	USPAT; US-P GPUB ; EPO; JPO; DER WENT; IBM_T DB	2004/04/12 15:23	
8	BRS	L8	2980	(p450 and (mutation or mutant))	USPAT; US-P GPUB ; EPO; JPO; DER WENT; IBM_T DB	2004/04/12 15:23	

	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments
9	BRS	L9	22	l8 and sesquiterpene	USPAT; US-P GPUB ; EPO; JPO; DER WEN T; IBM_T DB_	2004/04/12 15:24	
10	BRS	L10	154	p450 near10 (mutant or mutation)	USPAT; US-P GPUB ; EPO; JPO; DER WEN T; IBM_T DB_	2004/04/12 15:26	
11	BRS	L11	3	l10 and (sesquiterpene or limonene or pinene)	USPAT; US-P GPUB ; EPO; JPO; DER WEN T; IBM_T DB_	2004/04/12 15:27	
12	BRS	L12	167	(oxidation or oxidizing) near10 (sesquiterpene or limonene or pinene)	USPAT; US-P GPUB ; EPO; JPO; DER WEN T; IBM_T DB_	2004/04/12 15:27	

	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments
13	BRS	L13	3	l12 and p450	USPAT; US-P GPUB ; EPO; JPO; DER WENT; IBM_T DB	2004/04/12 15:29	
14	BRS	L14	10	p450bm-3	USPAT; US-P GPUB ; EPO; JPO; DER WENT; IBM_T DB	2004/04/12 15:31	
15	BRS	L15	27	mono-oxygenase near2 p450	USPAT; US-P GPUB ; EPO; JPO; DER WENT; IBM_T DB	2004/04/12 15:31	
16	BRS	L16	112	wong and nickerson	USPAT; US-P GPUB ; EPO; JPO; DER WENT; IBM_T DB	2004/04/12 15:34	

	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments
17	BRS	L17	6	mono-oxygenase near5 cytochrome near5 (mutant or mutation)	USPA T; US-P GPUB ; EPO; JPO; DER WEN T; IBM_T DB	2004/04/12 15:35	
18	BRS	L18	5	l6 and sesquiterpene	USPA T; US-P GPUB ; EPO; JPO; DER WEN T; IBM_T DB	2004/04/12 15:35	
19	BRS	L19	0	l17 and sesquiterpene	USPA T; US-P GPUB ; EPO; JPO; DER WEN T; IBM_T DB	2004/04/12 15:35	
20	BRS	L20	0	l17 and pinene	USPA T; US-P GPUB ; EPO; JPO; DER WEN T; IBM_T DB	2004/04/12 15:35	

	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments
21	BRS	L21	0	l17 and limonene	USPAT; US-PGPUB; ; EPO; JPO; DER WENT; IBM_TDR	2004/04/12 15:46	
22	BRS	L22	699	p450 and monooxygenase	USPAT; US-PGPUB; ; EPO; JPO; DER WENT; IBM_TDR	2004/04/12 15:46	
23	BRS	L23	17	l22 and terpenoid	USPAT; US-PGPUB; ; EPO; JPO; DER WENT; IBM_TDR	2004/04/12 15:46	

L14 ANSWER 14 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3

AN 1996:421110 CAPLUS

DN 125:81772

TI Plant cytochrome **P450 monooxygenases**

AU Schuler, Mary A.

CS Department Plant Biology, University Illinois, Urbana, IL, 61801, USA

SO Critical Reviews in Plant Sciences (1996), 15(3), 235-284

CODEN: CRPSD3; ISSN: 0735-2689

PB CRC

DT Journal; General Review

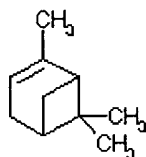
LA English

AB A review with 173 refs. Plant systems utilize a diverse array of cytochrome P 450 monooxygenases (P450s) in their biosynthetic and detoxification pathways. The classic forms of these enzymes are heme dependent mixed function oxidases that utilize NADPH or NADH and mol. oxygen to produce functionalized organic products. The nonclassical forms are monooxygenases that either do not utilize flavoproteins for dioxygen activation or fail to incorporate mol. oxygen into their final product. Biosynthetic P450s play paramount roles in the synthesis of lignin intermediates, sterols, **terpenes**, flavonoids, isoflavonoids, furanocoumarins, and a variety of other secondary plant products. Other catabolic P450s metabolize toxic herbicides and insecticides into nontoxic products or, conversely, activate nontoxic substances into toxic products. Biochem. and mol. characterizations on a number of plant P450s have indicated that the relationships between these heme proteins and their substrates are at least as complex as those that exist in mammalian systems. Examples now exist of plant P450s that metabolize: a narrow range of substrates to yield different products, a single substrate to yield different products, multiple substrates to yield the same product, or a single substrate sequentially to yield discrete intermediates in the biosynthesis of a single product. Extensive divergence of catalytic site as well as noncatalytic site residues accounts for the high degree of primary structure variation in the P 450 gene superfamily and the diverse array of substrates synthesized and/or detoxified by these proteins. Classic P450s still retain a highly conserved F--G-R-C-G motif in their catalytic site and conserved amino acids in their oxygen binding pocket; nonclassical P450s diverge at several of these positions. A broad range of cloning and transient expression strategies are suitable for plant P 450 studies and these have allowed for the isolation and characterization of a number of P 450 cDNAs and genes. Because many of these sequences have been cloned only recently, much remains to be learned about the substrate specificities of P 450 reactions in plants and the mechanisms by which their genes are regulated.

L14 ANSWER 18 OF 19 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1973:81003 CAPLUS
DN 78:81003
TI Component dynamics in oxygen reduction by cytochrome P450cam
AU Gunsalus, I. C.; Lipscomb, J. D.
CS Dep. Biochem., Univ. Illinois, Urbana, IL, USA
SO Mol. Basis Electron Transp., Proc. Miami Winter Symp. (1972), 179-96.
Editor(s): Schultz, J. Publisher: Academic, New York, N. Y.
CODEN: 25WHAS
DT Conference
LA English
AB The structure, properties, and reaction states of the 3 pure proteins of the cytochrome **P450 monooxygenase** system, rubredoxin, cytochrome b5, and putidaredoxin, which accomplish a 2-electron reduction of O and stereoselective conversion of specific methylene groups of certain related **terpenes** to secondary alcs. are considered. These proteins are composed of a single polypeptide chain, and each carries one mol. of its prosthetic group. Both rubredoxin and cytochrome b5 oxidize ferrous P450cam and, much more slowly, the ferrous oxy form, but neither reduces the former. The general reactions of putidaredoxin, reduction and reoxdn., are given in diagrams.

[LinkDB]

ENTRY	<u>C09880</u>	Compound
NAME	alpha-Pinene	
FORMULA	C10H16	



C09880

REACTION R06401 R06404 R06406
DBLINKS CAS: 80-56-8 2437-95-8
(ATOM AND BOND LINES ARE NOT SHOWN.)
///

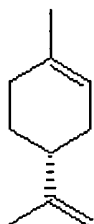
Option:

1. Without KCF lines [this page]
2. Entire COMPOUND data
3. Launch ISIS/Draw ... See instructions for setup.

[KEGG | DBGET | GenomeNet]

[[LinkDB](#)]

ENTRY	<u>C06099</u>	Compound
NAME	(+)-Limonene	
	(+)-R-Limonene	
FORMULA	C10H16	



C06099

REACTION	<u>R06119</u>	<u>R06120</u>	<u>R06398</u>
ENZYME	<u>1.14.13.80</u>	<u>4.2.3.20</u>	

(ATOM AND BOND LINES ARE NOT SHOWN.)
///

Option:

1. Without KCF lines [this page]
2. Entire COMPOUND data
3. Launch ISIS/Draw ... See instructions for setup.

[[KEGG](#) | [DBGET](#) | [GenomeNet](#)]